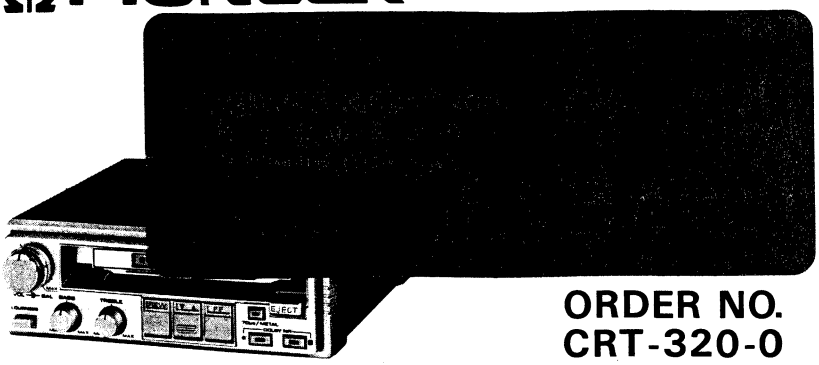
'45

PIONEER®

Service Manual



ORDER NO.
CRT-320-0

COMPONENT CAR STEREO CASSETTE DECK

KP-818G E

NOTE:
The cassette mechanism description, refer to the CX-118FV, FV/A Service Manual (CRT-199).

SPECIFICATIONS

General

Power source . . . . . DC14.4V (10.8 ~ 15.6V allowable)
Grounding system . . . . . Negative type
Dimensions . . . . . 150 (W) x 50 (H) x 167 (D) mm
Weight 1.6kg
Tone controls (bass) . . . . . ±10 dB (100 Hz)
(treble) . . . . . ±10 dB (10 kHz)
Loudness contour . . . . . +12 dB (100 Hz), + 4 dB (10 kHz)
(Volume: –30 dB)
Maximum output level 200mV
Output impedance 1kΩ

Tape Player

Tape . . . . . Compact cassette tape (C-30 ~ C-90)
Tape speed . . . . . 4.76cm/sec.(+0.19cm/sec.-0.05cm/sec.)
Fast forward/rewind time . . . . . Approx. 100 sec. for C-60
Wow & flutter . . . . . 0.09% (WRMS)
Frequency response . . . . Metal: 30 ~ 20,000 Hz (±3 dB)
Normal: 30 ~ 16,000 Hz (±3 dB)
Stereo separation . . . . . 45 dB
Signal-to-noise ratio
. . . . . Dolby C TYPE NR IN: 70 dB (IEC-A network)
Dolby B TYPE NR IN: 63 dB (IEC-A network)
Dolby NR OUT: 55 dB (IEC-A network)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. 1925 E. Dominguez St., Long Beach, California 90810 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia

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1331

P-818G

CONTENTS

1. PARTS LOCATION 1
2. CIRCUIT DESCRIPTION 2
3. BLOCK DIAGRAM 8
4. LEVEL DIAGRAM 8
5. ADJUSTMENT 9
   5. 1 Dolby NR Level Adjustment 9
6. SCHEMATIC CIRCUIT DIAGRAM 12
7. CONNECTION DIAGRAM 15
8. CABINET EXPLODED VIEW 18
9. CHASSIS EXPLODED VIEW 19
10. CASSETTE MECHANISM EXPLODED VIEW (TOP) 22
11. CASSETTE MECHANISM EXPLODED VIEW (BOTTOM) 25
12. ELECTRICAL PARTS LIST 28
13. PACKING METHOD 31

CAUTION

When Handling IC PD2001.
Please Observe:
IC PD2001 (IC601 in the Control Unit (B)) is C-MOS IC of extremely low power consumption and very high input impedance. Unless handled with special care, they could be damaged by static electricity induction. This IC is supplied with a shorting cap (of aluminum foil) attached. When soldering or performing other repair work, always attach this cap as shown below. Remove the cap after the repair has been completed.
Also, this type IC must not be inserted in a polystyrene package for storage.

- 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

1. PARTS LOCATION

NOTE

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ : GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

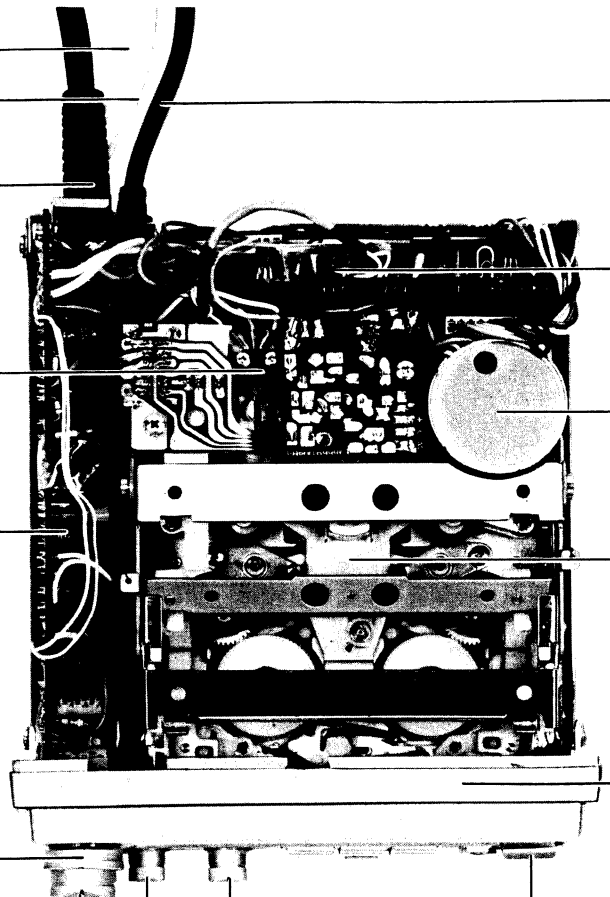


Fig. 1

2. CIRCUIT DESCRIPTION

• Cassette Mechanism Control Circuit

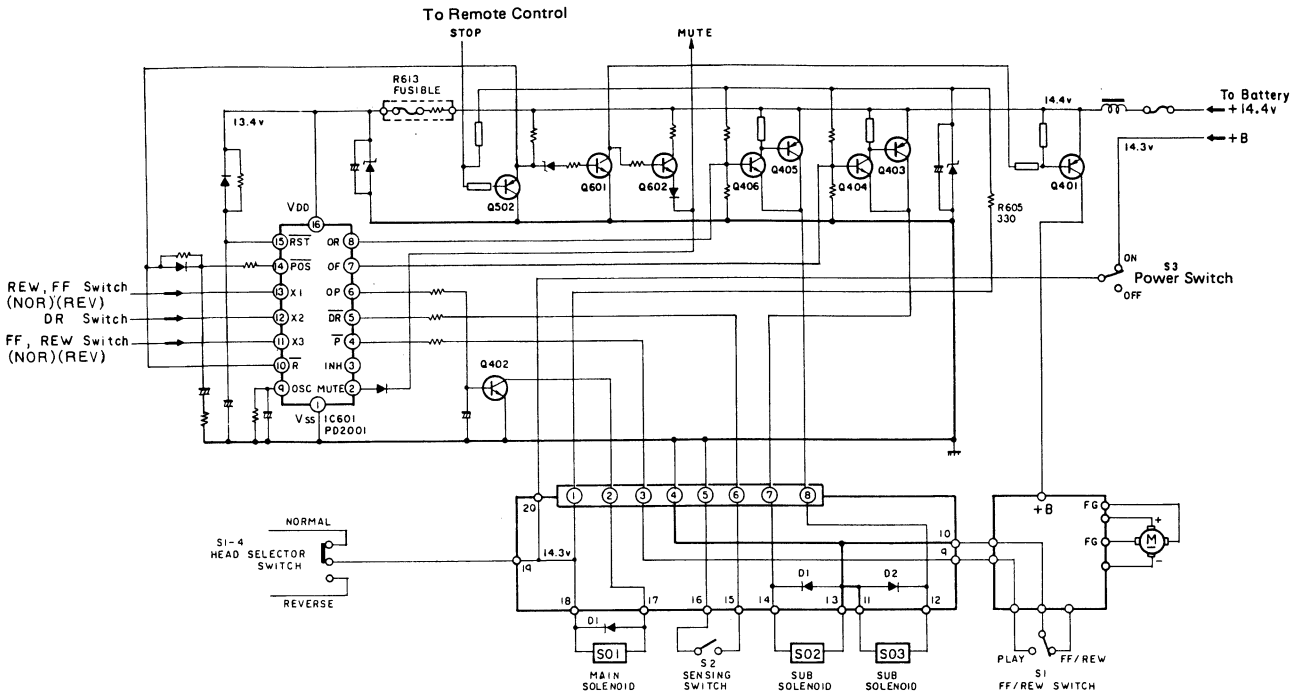


Fig. 2

In this control circuit:

1) Feather touch tape deck controller
PD2001 (16P DIP C-MOS IC)

2) The X1, X3 (REW, FF input) terminals are for both input and output. When a key is pressed, the signal passes through IC452 and, according to the transistor driver and IC451, lights the appropriate LED and, in the case of REW and FF, causes the LED to flash on and off.

3) Direction change operation (Fig. 3).

A CLK OSC is included with terminal 1 and is constantly generating an 80 Hz pulse. This passes through the 5-bit binary counter to control the timing of all operations. When an input from X2 is received, a muting signal is generated and a signal to drive the main solenoid is sent for 150msec from terminal ⑥.

Once operation of the main solenoid has ended, a muting signal is generated for another 200msec to prevent pop noise.

4) Sub-solenoid double-pull circuit (Fig. 4).

When the transport mode is switched from play to FF or REW, a signal is generated from terminals ⑦ and ⑧ and the sub-solenoids are both pulled only when the signal is absorbed. In the FF and REW modes, the sub-solenoid in the input direction is held and the other one moves away.

This double-pull system doubles the sub-solenoid absorption head base stopper release power. That is, the load on the solenoid is lessened so they are stronger with less power.

5) Operation at tape end (Fig. 5).

During FF or REW, when the tape end detection switch S2 (cassette mechanism assembly) momentarily switches on and an input is received at terminal ⑤ ($\overline{DR}$), the sub-solenoids are released. Then after 50msec, a signal is generated from terminal ⑥ to drive the main solenoid and change the direction of tape travel.

6) Reset terminal.

In order to make the rise of reset terminal ⑮ slower than that of VDD terminal ⑯ and also assure a rapid drop when power is turned off, an external circuit is provided to be absolutely certain that initial reset is applied.

X 2 ($\overline{DR}$ CHANGE) INPUT

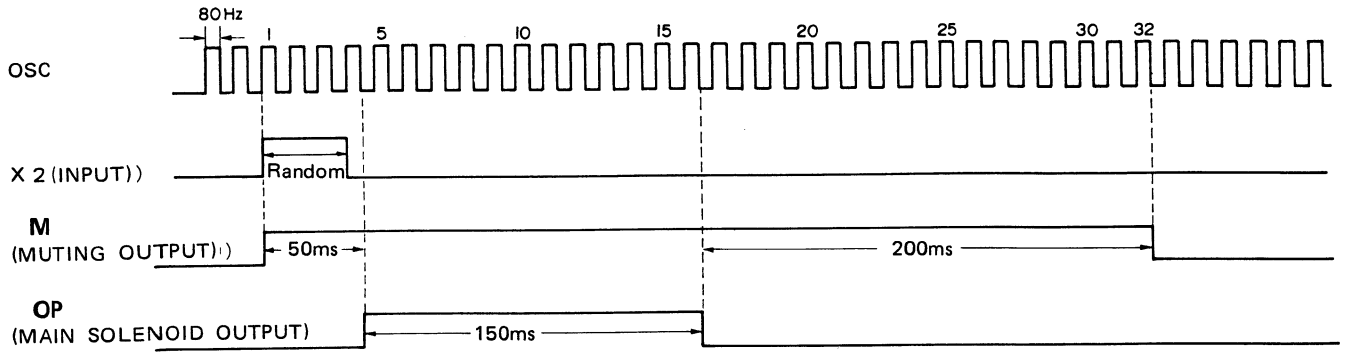


Fig. 3

X 1 INPUT　　X 3 INPUT

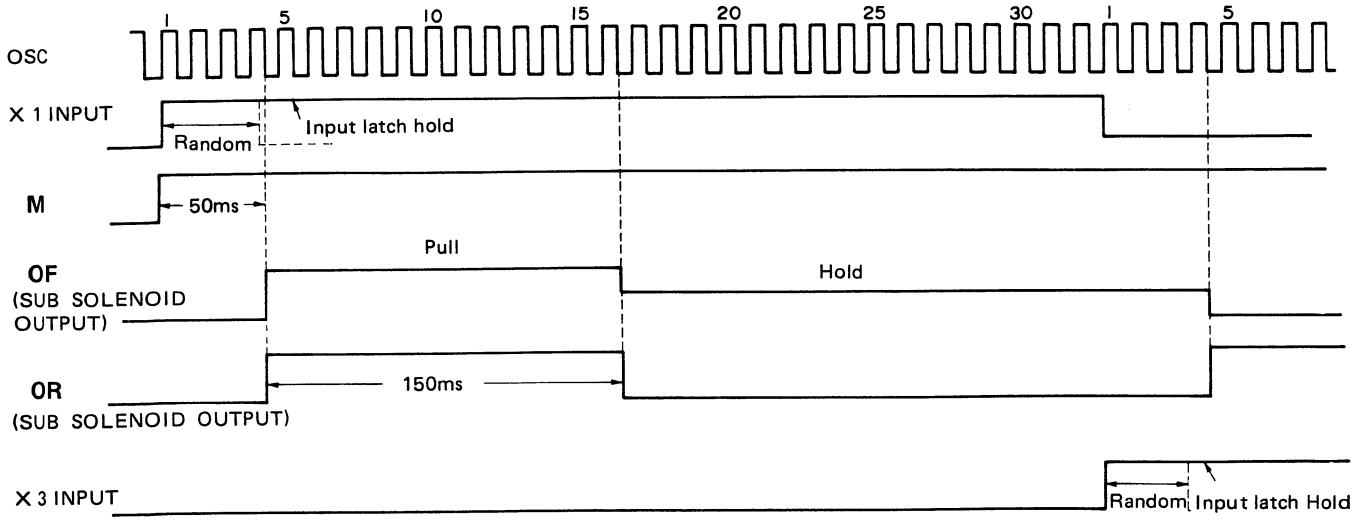


Fig. 4

$\overline{DR}$ INPUT OPERATION

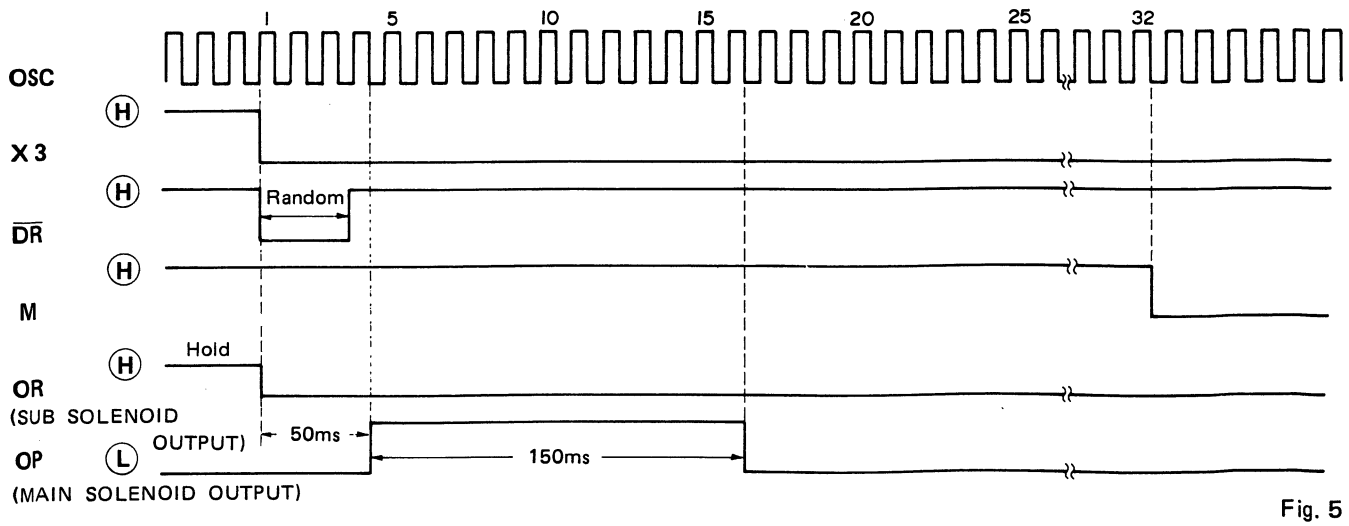


Fig. 5

• POS (Power OFF Stop) Operation

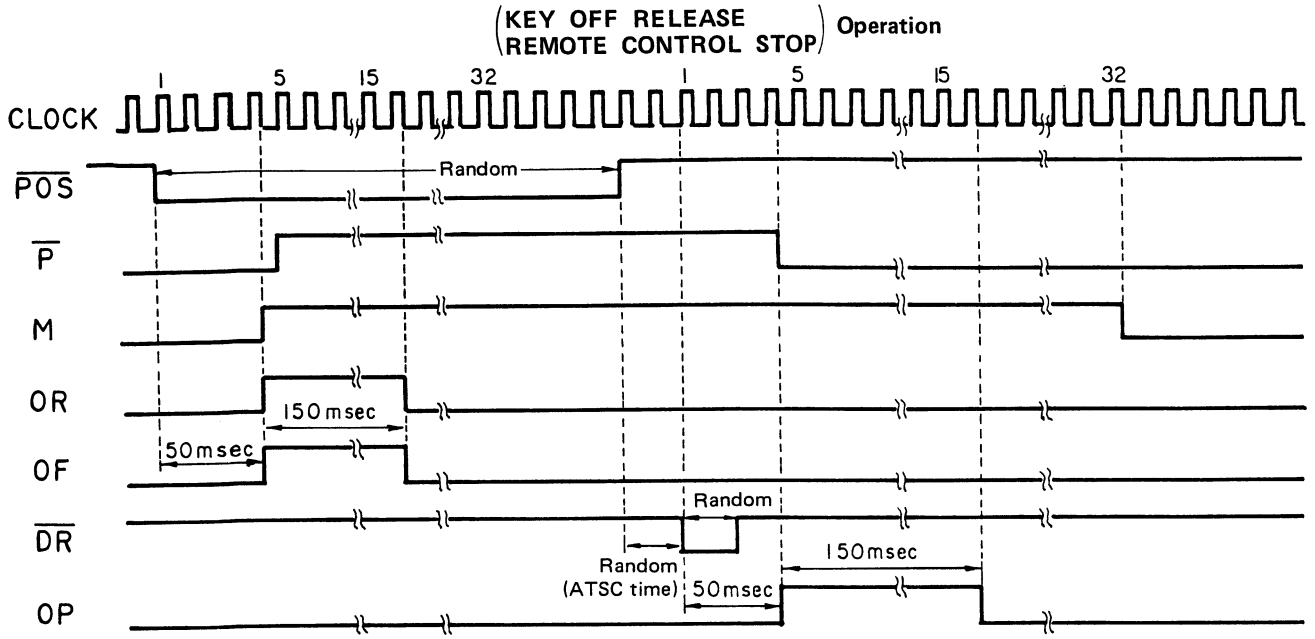


Fig. 6

When the accessory key is turned off or the remote control stop button is pressed, the motor stops and, about 2 seconds later, the positive terminal ⑭ of IC601(PD2001) goes to "L". A 150msec signal is generated from terminals ⑦ and ⑧ (OF, OR) to drive the sub-solenoids (SO2, SO3) and stop all operations. When POS operation is cancelled, operation begins from automatic tape slack cancel and the play mode is begun.

• FF/REW Exclusivity Circuit

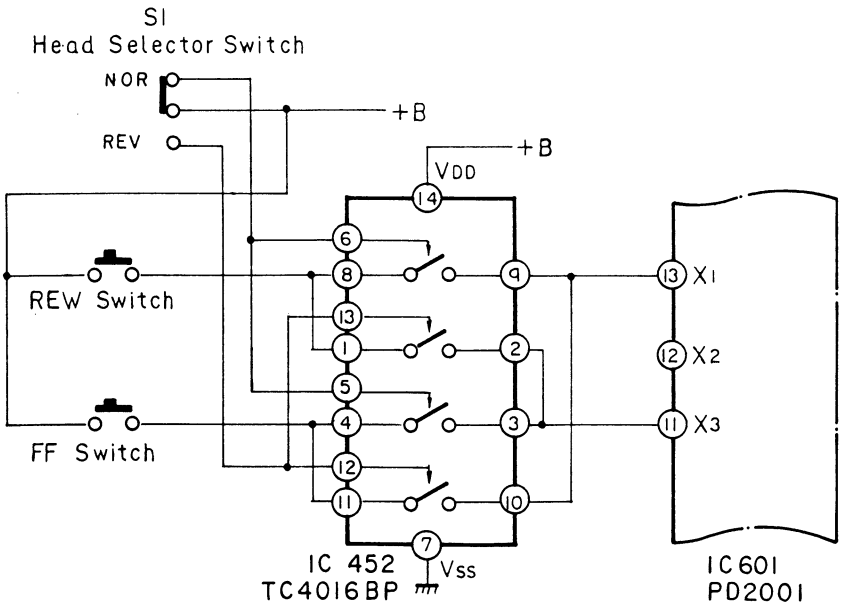
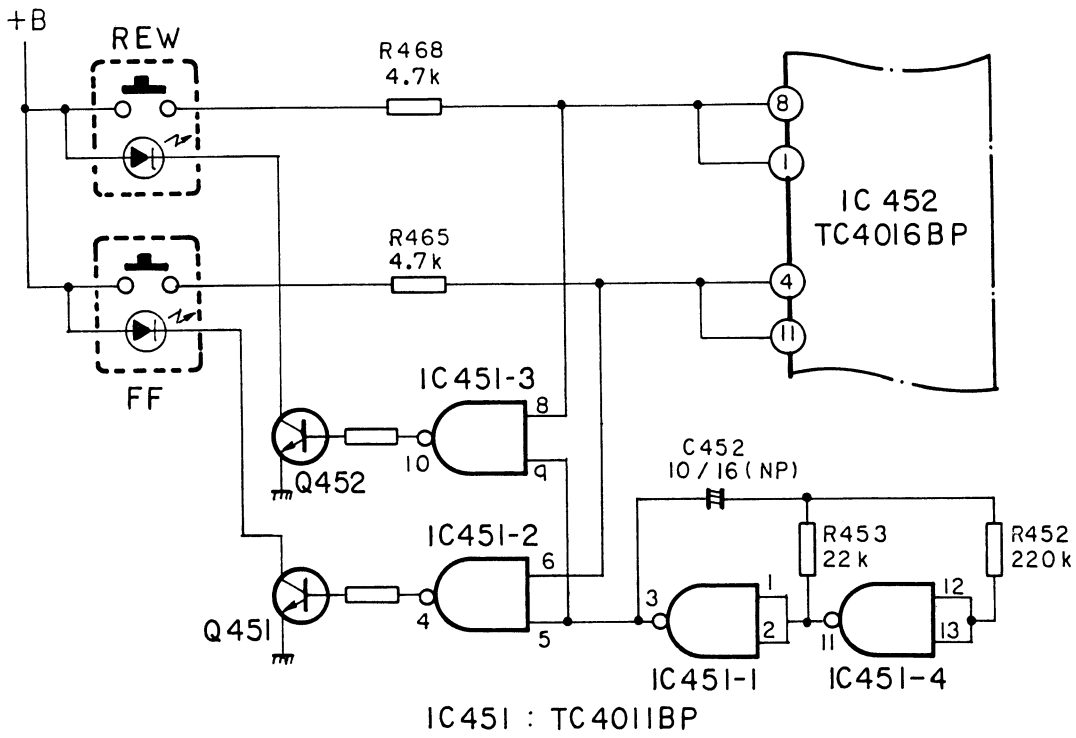


Fig. 7

This circuit permits FF and REW operation when either button is pressed in the normal or reverse modes. In the normal mode, terminals ⑤ and ⑥ of IC452(TC4016BP) go to "H", the electronic switchs between ③ and ④ and ⑧ and ⑨ turn on and the electronic switches between ① and ② and ⑩ and ⑪ turn off.

As a result, the signal generated when the FF button is pressed goes to terminal ⑪(X3) of IC601 and the signal generated when the REW button is pressed goes to terminal ⑬(X1). In the reverse mode, the FF signal goes to terminal ⑬(X1) of IC601 and the REW signal to terminal ⑪(X3), a different transmission path than the normal mode.

• FF/REW LED Circuit



Oscillation cycle T= 2.2 X (R453) X (C452)

Fig. 8

This circuit lights the FF or REW LED when one of those buttons is pressed during the play mode or causes the FF or REW LED to flash on and off during the normal FF or REW mode.

During the play mode, terminals ⑧ and ⑥ of IC451 (TC4011BP) are "L" so terminals ⑩ and ④ are "H". The FF or REW LED lights because Q451 or Q452 goes on.

When the FF button is pressed, terminal ⑥ of IC451 goes to "H". An output synchronized with the oscillation of the inside of IC451 (the two gates IC451-1 and IC451-4) and C452, R453 goes to Q451 from terminal ④ and causes the FF LED to flash on and off. When the REW button is pressed, terminal ⑧ of IC451 goes to "H". An output synchronized with the inside of IC451 (the two gates IC451-1 and IC451-4) and C452, R453 goes to Q452 from terminal ⑩ and causes the REW LED to flash on and off.

• Remote Control Circuit

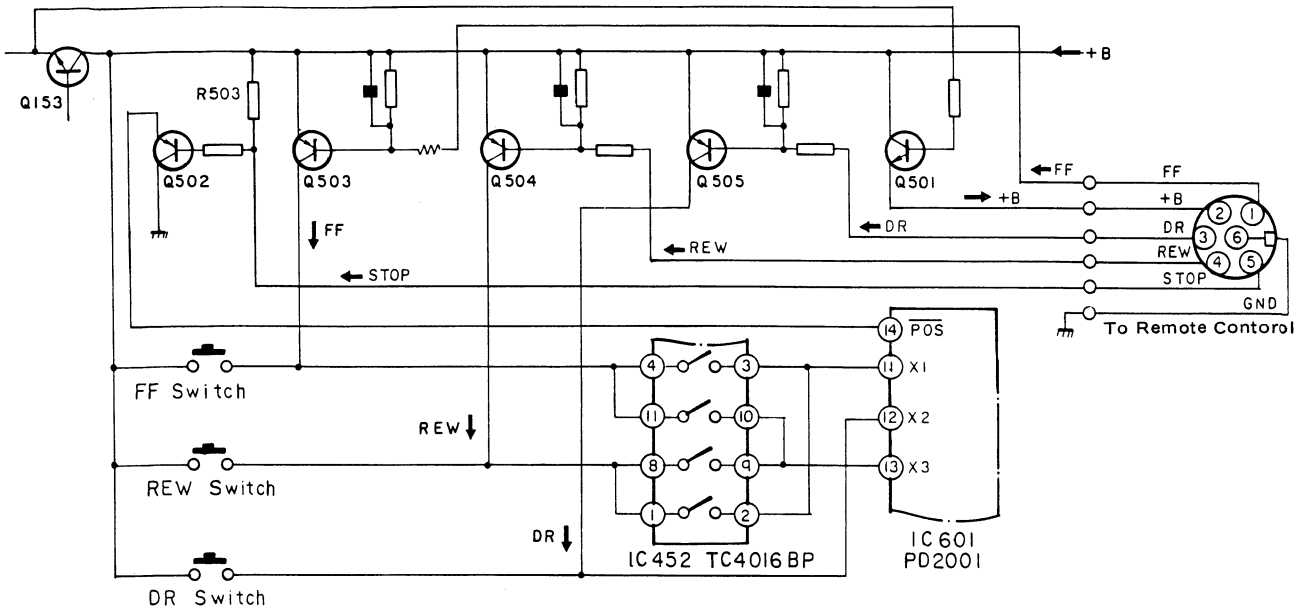


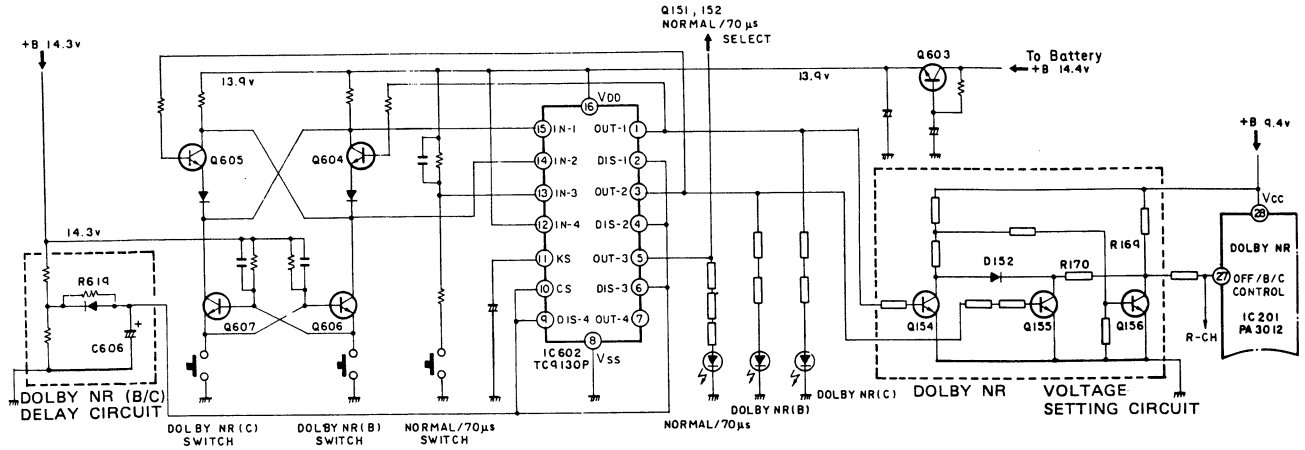
Fig. 9

When the REL button on the remote control is pressed, the base of Q505 goes to "L", Q505 turns on and $\overline{DR}$ direction change) begins to operate. When the FF button is pressed, the base of Q503 goes to "L", Q503 turns on and FF operation begins. When the REW button is pressed, the base of Q504 goes to "L", Q504 turns on and REW operation begins. When the STOP button is pressed, the base of Q502 goes to "L", Q502 turns on and the $\overline{POS}$ line goes to "L". In about 2 seconds, the sub-solenoids are driven to stop all operations.

When power is turned off, R503 causes the base of Q502 goes to "L" so Q502 is turned on and the $\overline{POS}$ line goes to "L" to perform a key off release function.

Q501 is the remote control illumination driver transistor.

• Switch Position Switching Control and Memory Circuit



• **Dolby NR(B/C) Switching Operation**

Dolby NR(C) Switch ON → IC602 ⑮ → ON, OFF
① → Q154 → Q156
③

Dolby NR(B) Switch ON → IC602 ⑭ → ON, OFF
③ → Q155 → Q156
①

(① and ③ of IC602 will not both go to "H" at once because of Q604–Q607.)

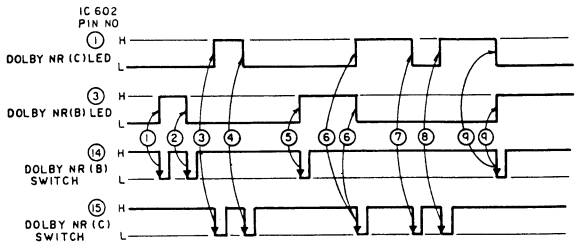


Fig. 10

This circuit controls normal/70μs switching and Dolby NR B/C switching.

IC602 (TC9130P) is a 4-channel independent cyclix type C-MOS IC. Each time an "L" pulse is input, output is reversed. Therefore, each time the normal/70μs button is pressed, terminal ⑬ of IC602 goes to "L" and the output of terminal ⑤ switches from "L" to "H" to "L" and so on. This causes Q151 and Q152 to turn on or off to switch between the normal and 70μs modes.

1) Dolby delay circuit

When power is turned on, this circuit delays application of the Dolby control voltage until the Dolby NR IC stabilizes (whether Dolby B or C was being used just before power was turned off) to prevent pop noise.

Delay time T = (R619) X (C606)

2) Dolby control voltage setting circuit

Switching between dolby B and C is done by the voltage applied to terminal ㉗ of IC201 and 202.

*** Dolby C**

When the Dolby C button is pressed, terminal ⑮ of IC602 goes to "L" and terminal ① goes to "H". Note that terminal ③ is always "L" at this time. Then Q154 turns on and Q156 turns off. The collector voltage of Q156 goes to "H", about the same voltage as the power supply voltage for the Dolby NR (B/C) IC, and Dolby C is activated.

*** Dolby B**

When the Dolby B button is pressed, terminal ⑭ of IC602 goes to "L" and terminal ③ goes to "H". Note that terminal ① is always "L" at this time. Then, even when Q155 is on and Q154 is off, D152 causes the collector voltage of Q154 to go to "L" and Q156 turns off. The division ratio between R169 and R170 causes the power supply voltage for the Dolby NR (B/C) IC to be reduced by about half and Dolby B is activated.

3) Memory circuit

+B is constantly fed to the collector of Q603 from the battery, so IC602 is always on. Switch positions at the time power was turned off are retained in the memory so the unit always returns to those settings when power is turned on again.

3. BLOCK DIAGRAM

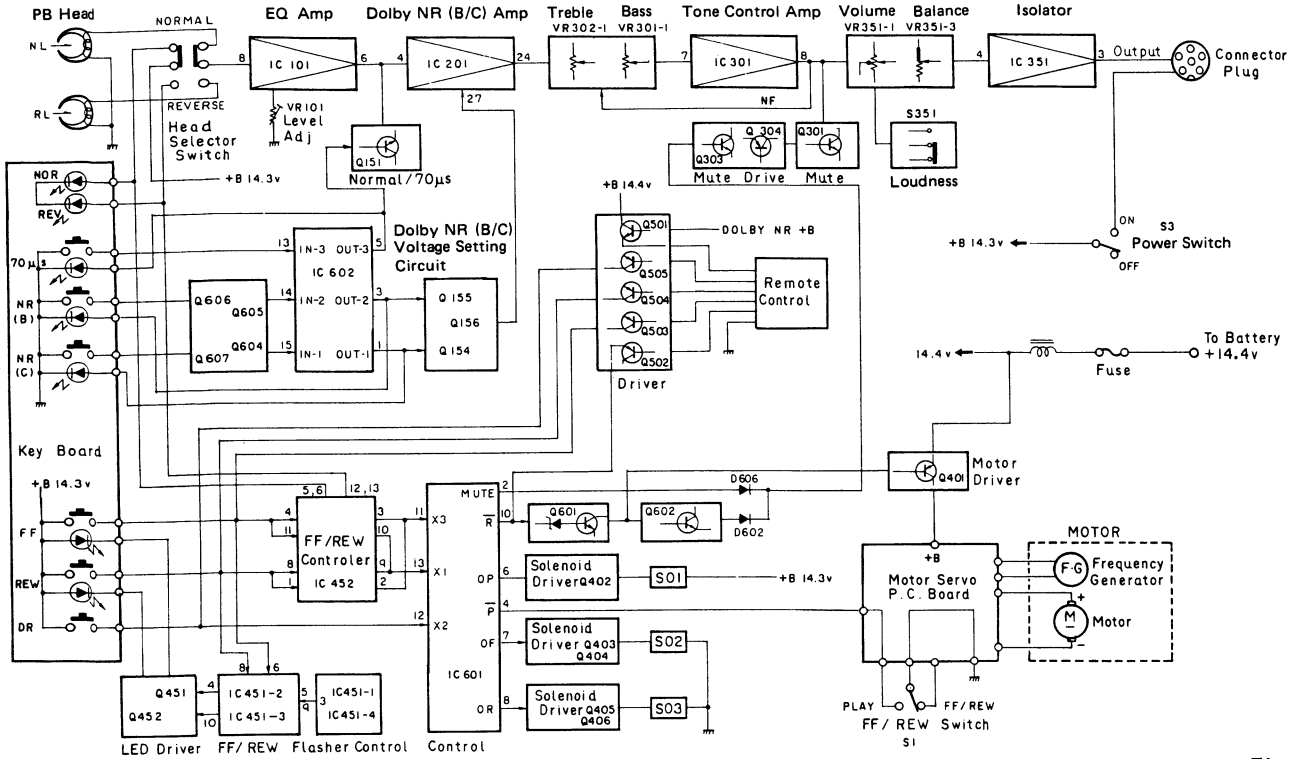


Fig. 11

4. LEVEL DIAGRAM

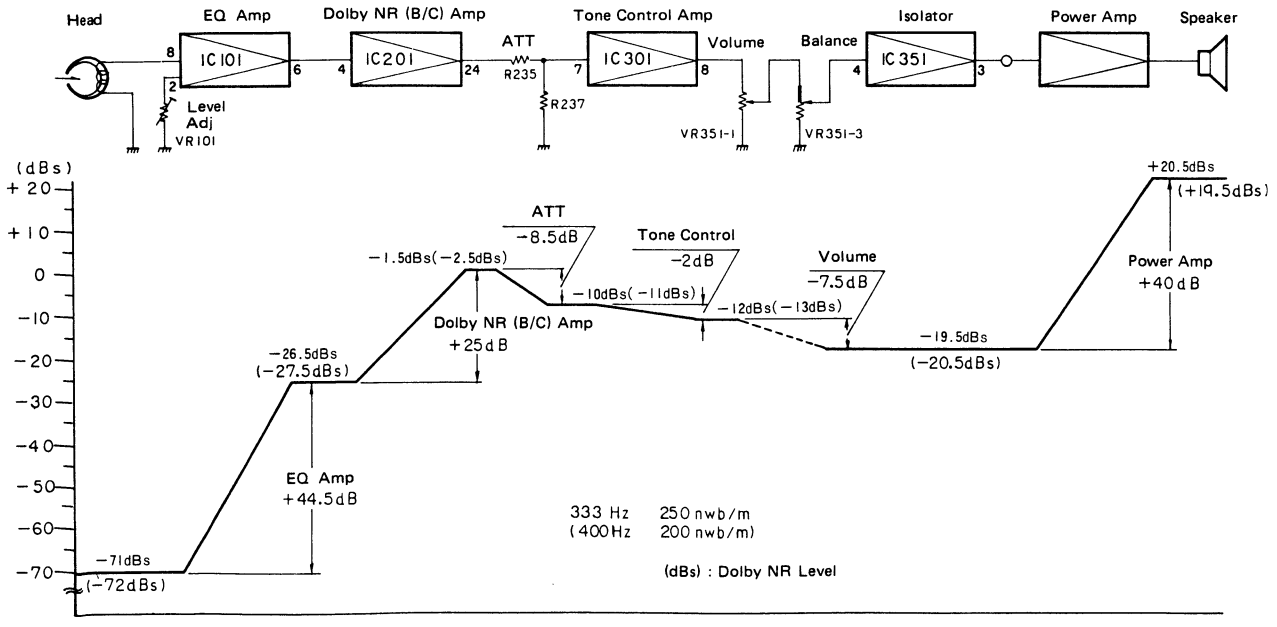


Fig. 12

5. ADJUSTMENT

5. 1 DOLBY NR LEVEL ADJUSTMENT

- **Connection Diagram**

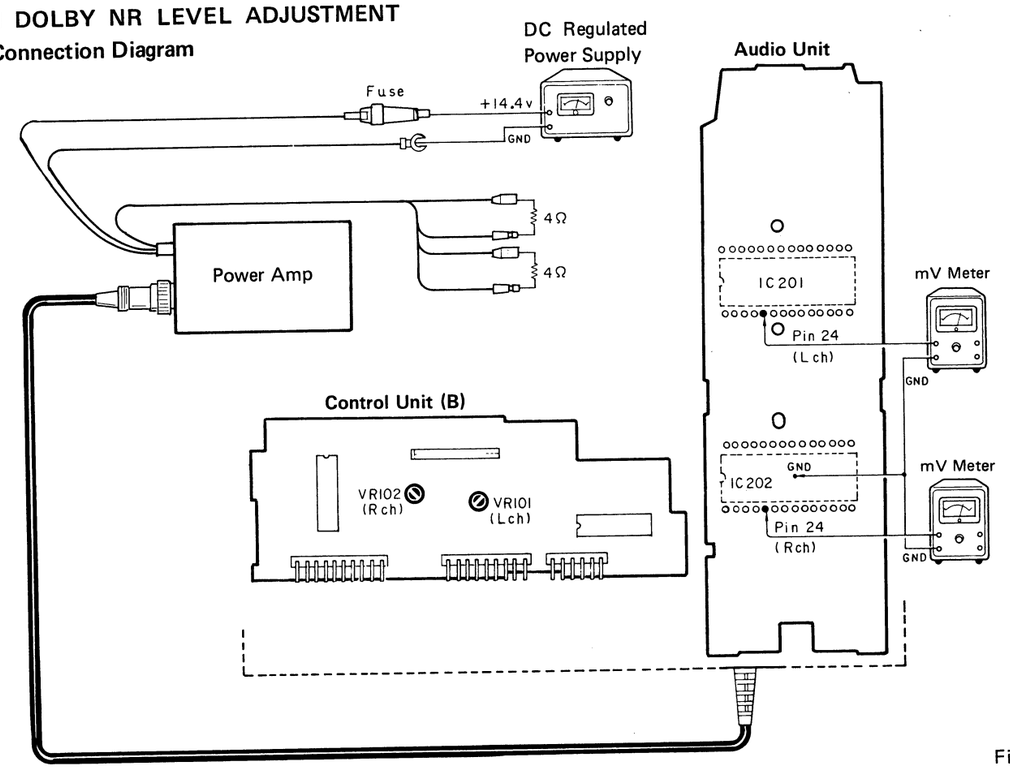


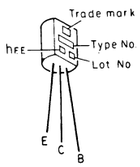
Fig. 13

- **To Adjust**

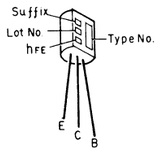
1. Playback the CT-150 (400 Hz, 200nwb/m) test tape, and adjust VR101 (Lch) and VR102 (Rch) so that the mV meters read 580mV (–2.5 dBs.)

- **IC's and Transistors**

2SC828



2SC2320



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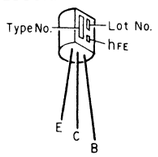
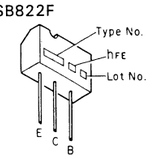
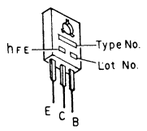
2SC945
2SC536NP



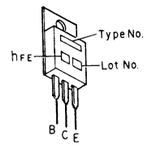
2SA937F
2SC2021F
2SB822F



2SD612
2SD1189



2SB941
2SD1276



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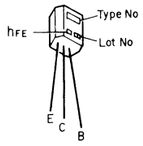
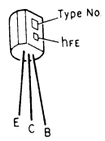
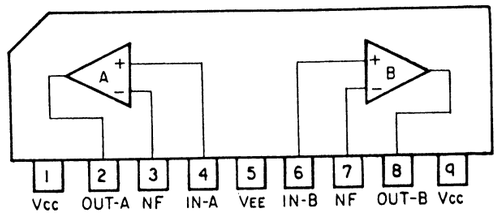


JC501

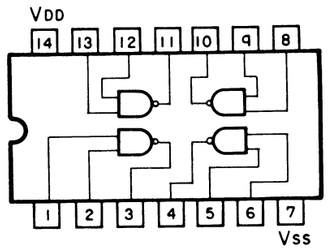


- **Control Unit (A)**

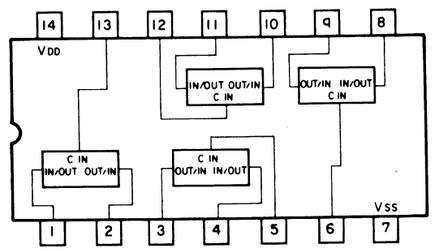
IC301 : TA75558S



IC451 : TC4011BP

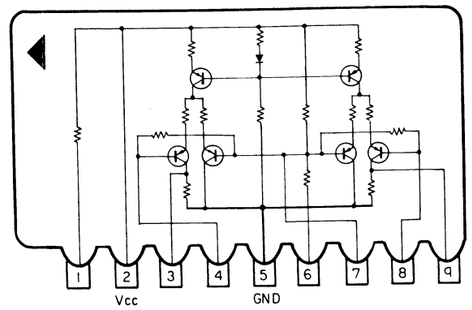


IC452 : TC4016BP

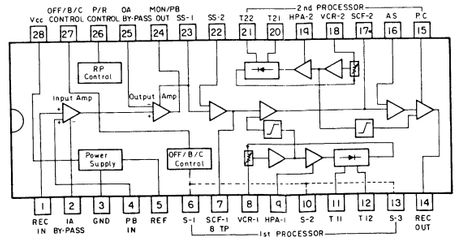


- **Audio Unit**

IC351 : KHA102



IC201 , IC202 : PA3012



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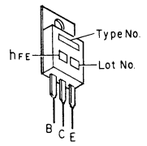
2SD1276



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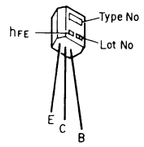

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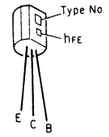
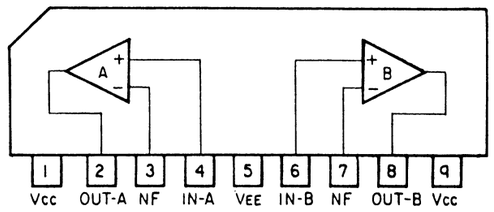
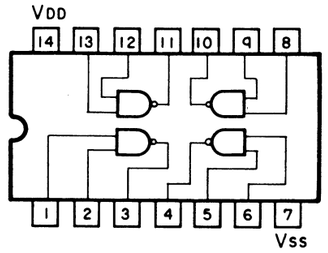


• Control Unit (A)

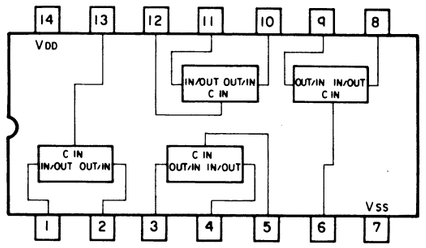
IC301 : TA75558S



IC451 : TC4011BP

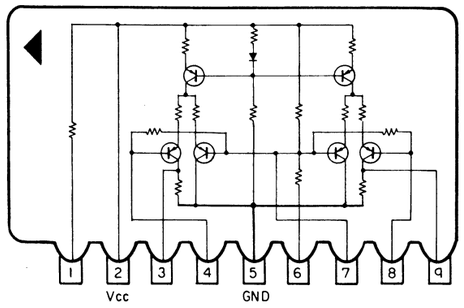


IC452 : TC4016BP

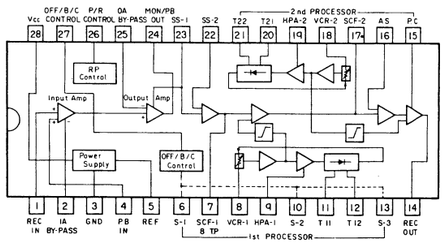


• Audio Unit

IC351 : KHA102

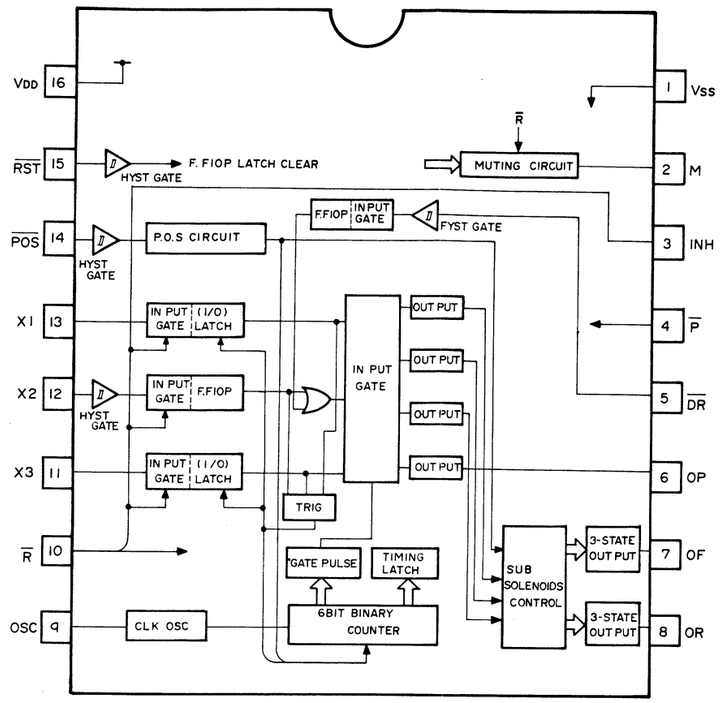


IC201 , IC202 : PA3012

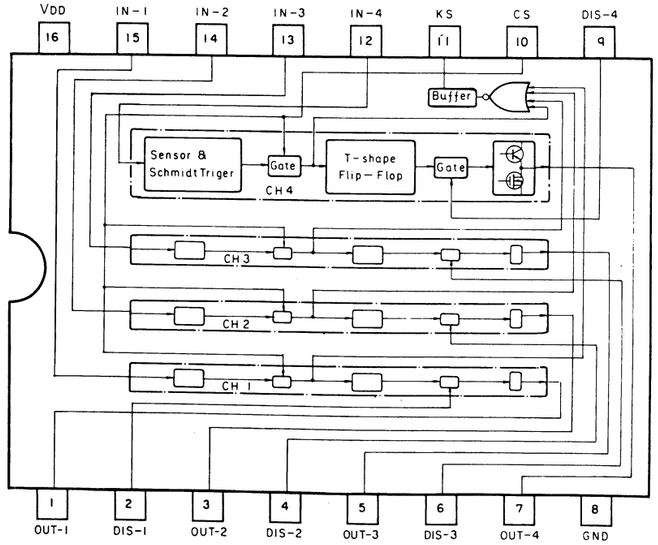


• Control Unit (B)

IC601 : PD2001



IC602 : TC9130P



IC101 : TA7325P

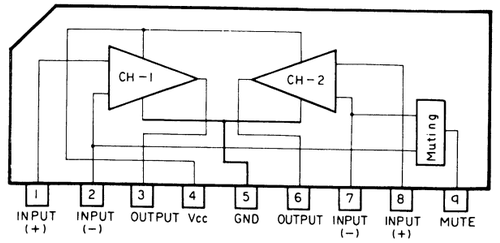
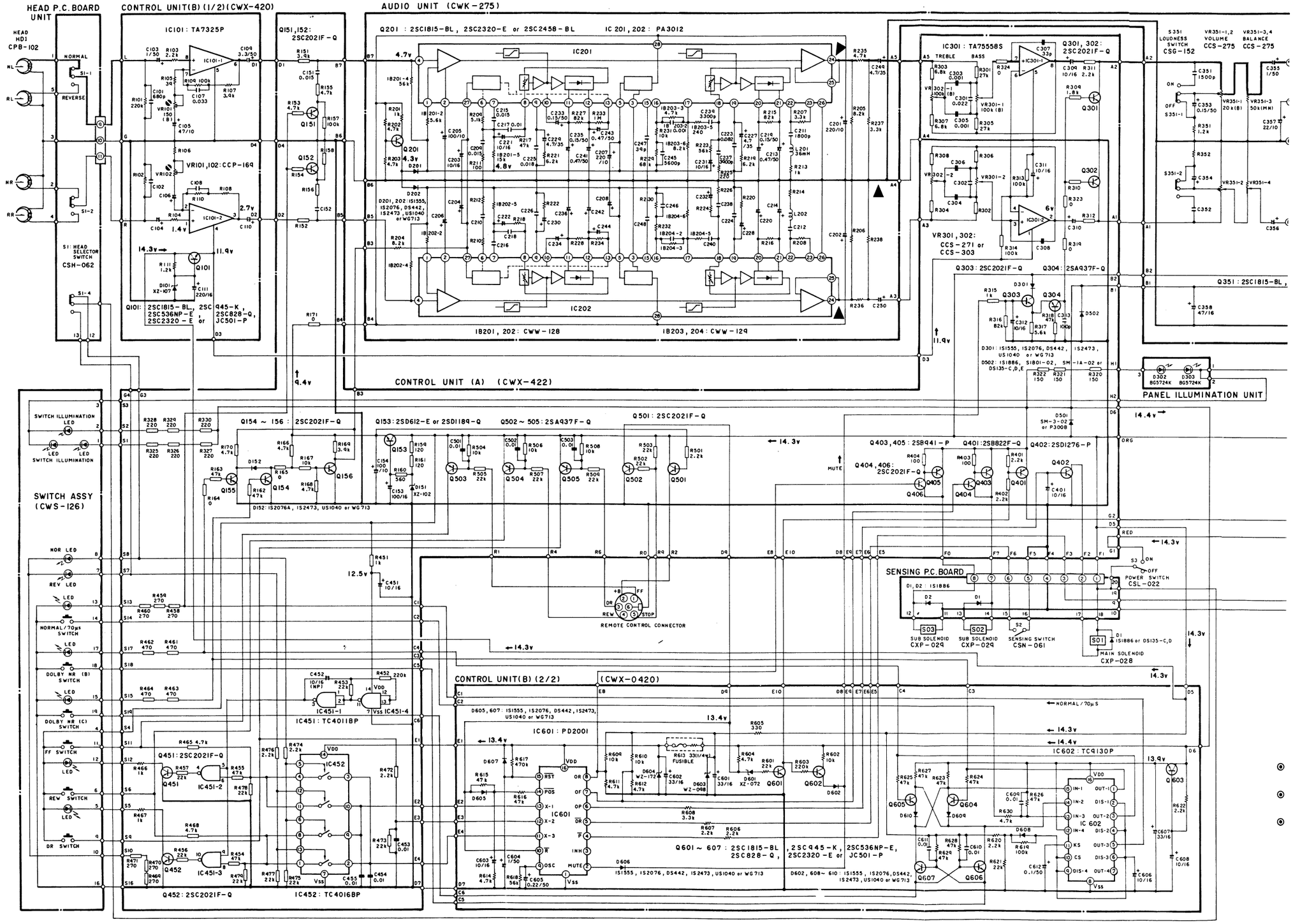
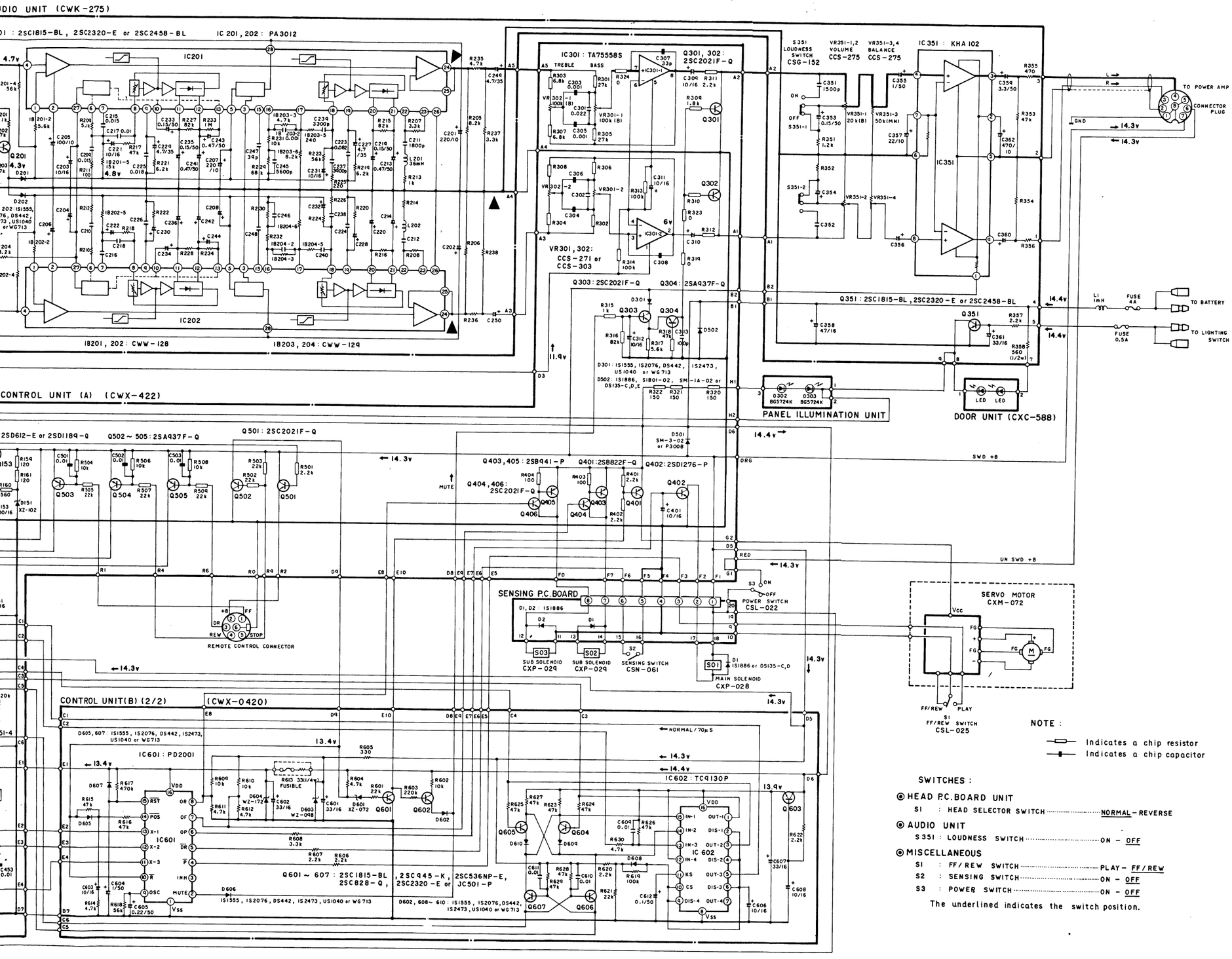


Fig. 13

6. SCHEMATIC CIRCUIT DIAGRAM





NOTE :

Indicates a chip resistor

Indicates a chip capacitor

SWITCHES :

◉ HEAD P.C.BOARD UNIT

S1 : HEAD SELECTOR SWITCH ..... NORMAL – REVERSE

◉ AUDIO UNIT

S351 : LOUDNESS SWITCH ..... ON – OFF

◉ MISCELLANEOUS

S1 : FF/REW SWITCH ..... PLAY – FF/REW

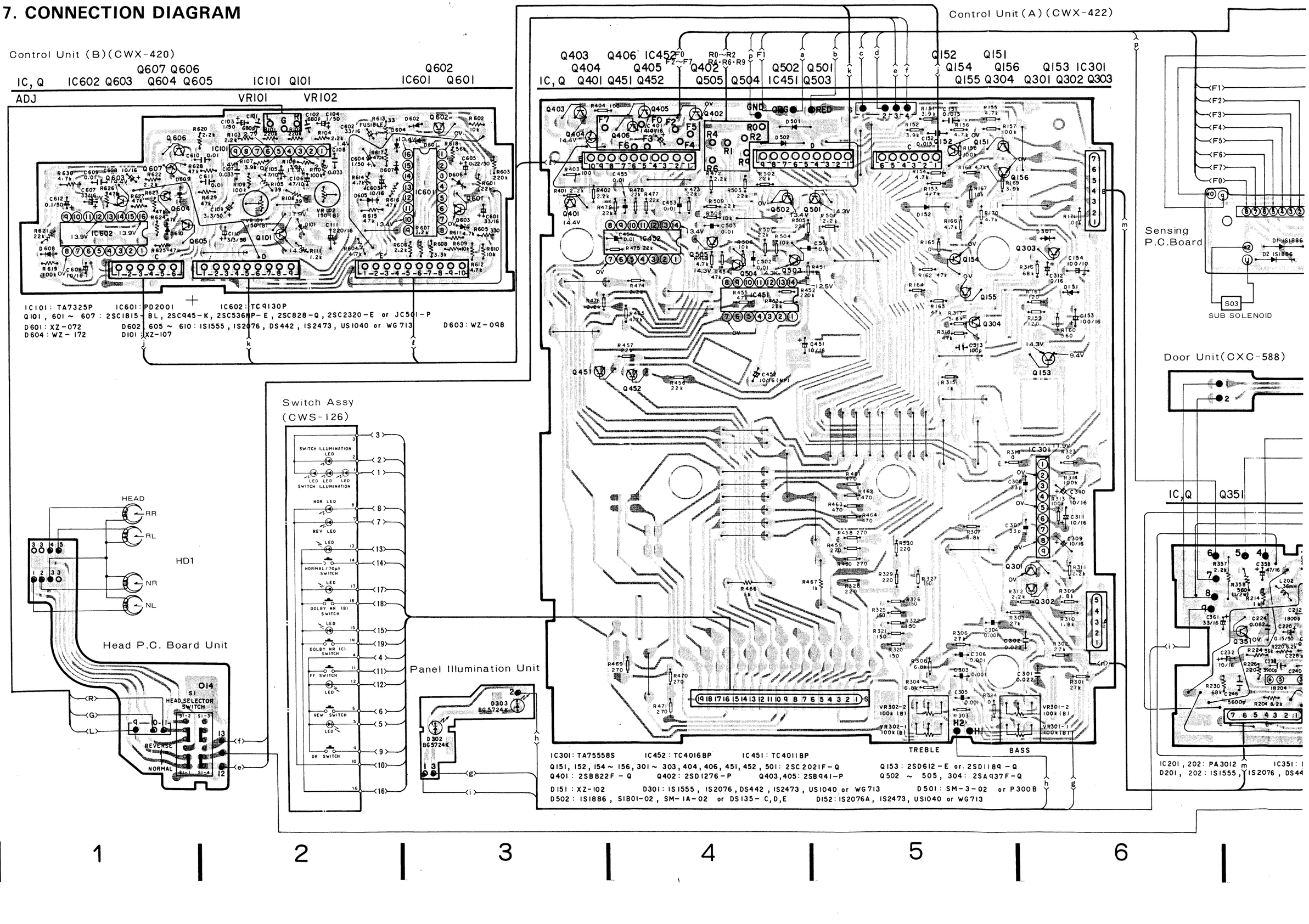
S2 : SENSING SWITCH ..... ON – OFF

S3 : POWER SWITCH ..... ON – OFF

The underlined indicates the switch position.

Fig. 14

7. CONNECTION DIAGRAM



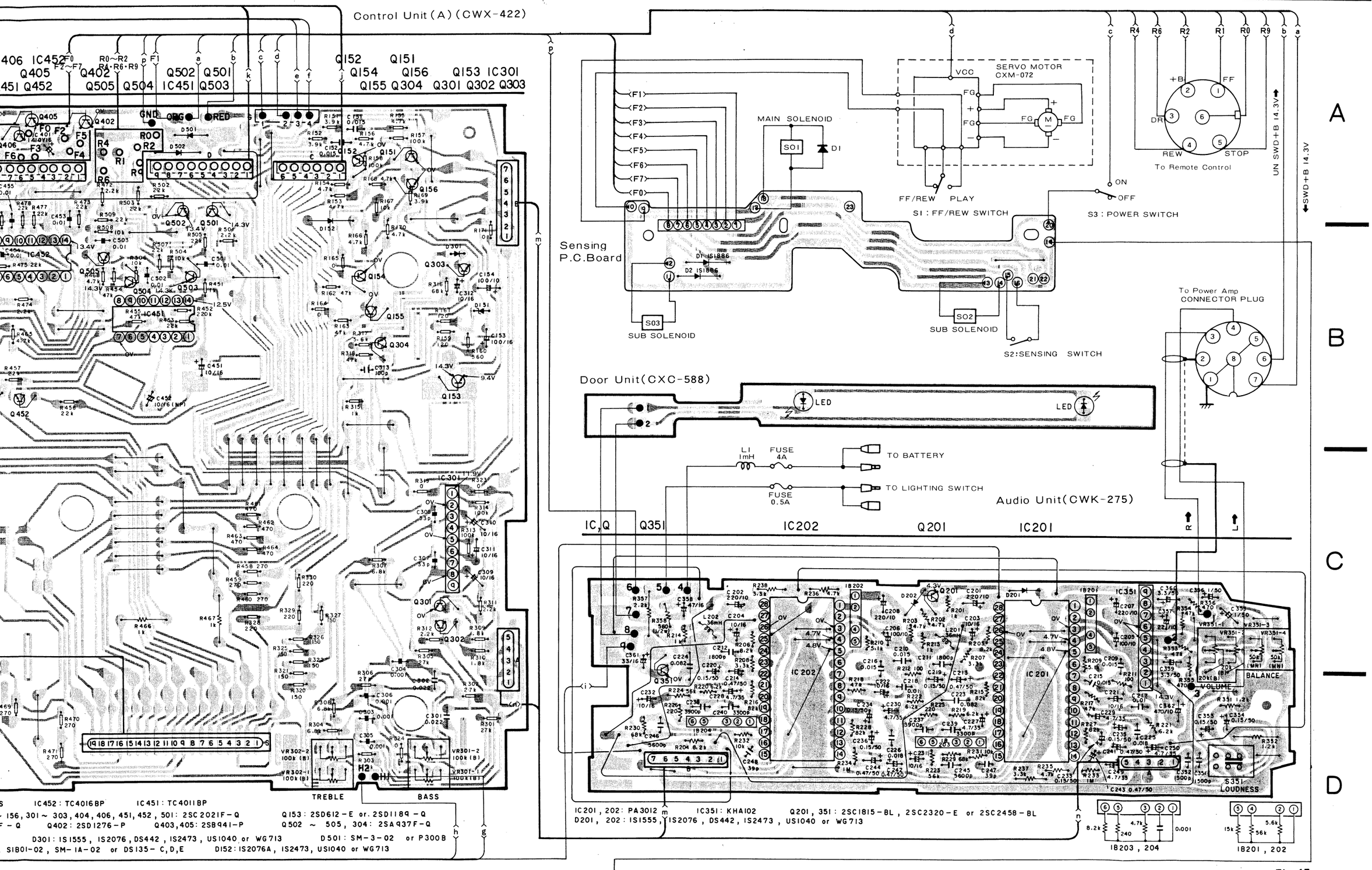

Control Unit (A) (CWX-422)
Sensing P.C.Board
MAIN SOLENOID
SERVO MOTOR CXM-072
FF/REW PLAY
S1 : FF/REW SWITCH
S3 : POWER SWITCH
ON
OFF
To Remote Control
REW
STOP
SUB SOLENOID
S2:SENSING SWITCH
To Power Amp CONNECTOR PLUG
Door Unit(CXC-588)
LED
TO BATTERY
TO LIGHTING SWITCH
Audio Unit(CWK-275)
TREBLE
BASS
VOLUME
BALANCE
LOUDNESS
IC452 : TC4016BP
IC451 : TC4011BP
Q153 : 2SD612-E or 2SD1189-Q
Q402 : 2SD1276-P
Q403,405 : 2SB941-P
D501 : SM-3-02 or P300B
D152 : IS2076A, IS2473, US1040 or WG713
IC201, 202 : PA3012
IC351 : KHA102
Q201, 351 : 2SC1815-BL, 2SC2320-E or 2SC2458-BL
D201, 202 : IS1555, IS2076, DS442, IS2473, US1040 or WG713

Fig. 15

8. CABINET EXPLODED VIEW

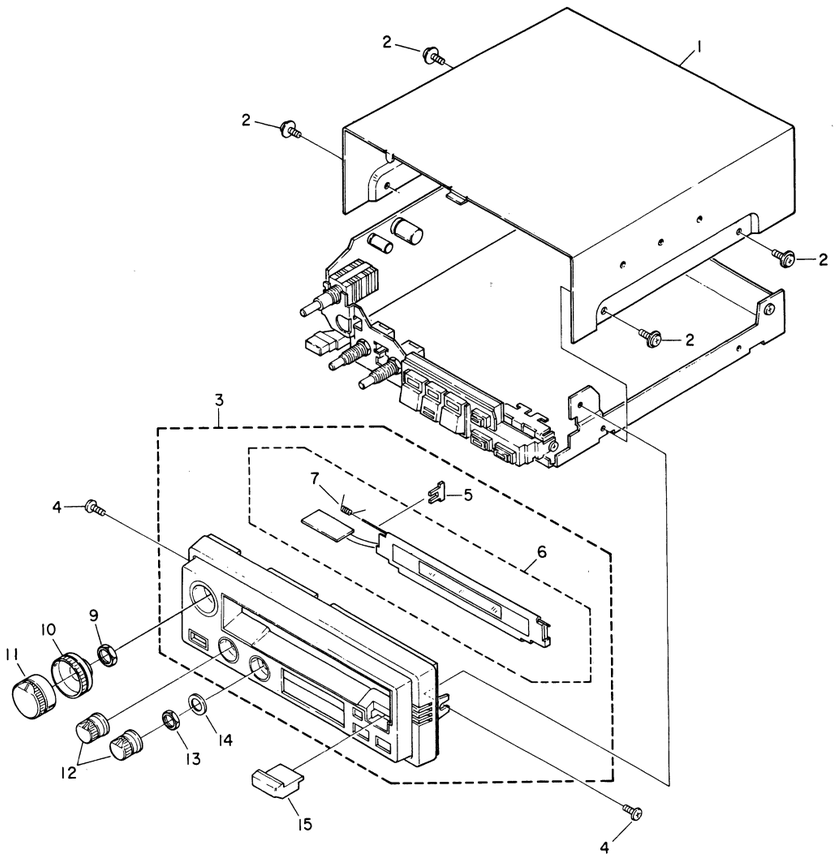
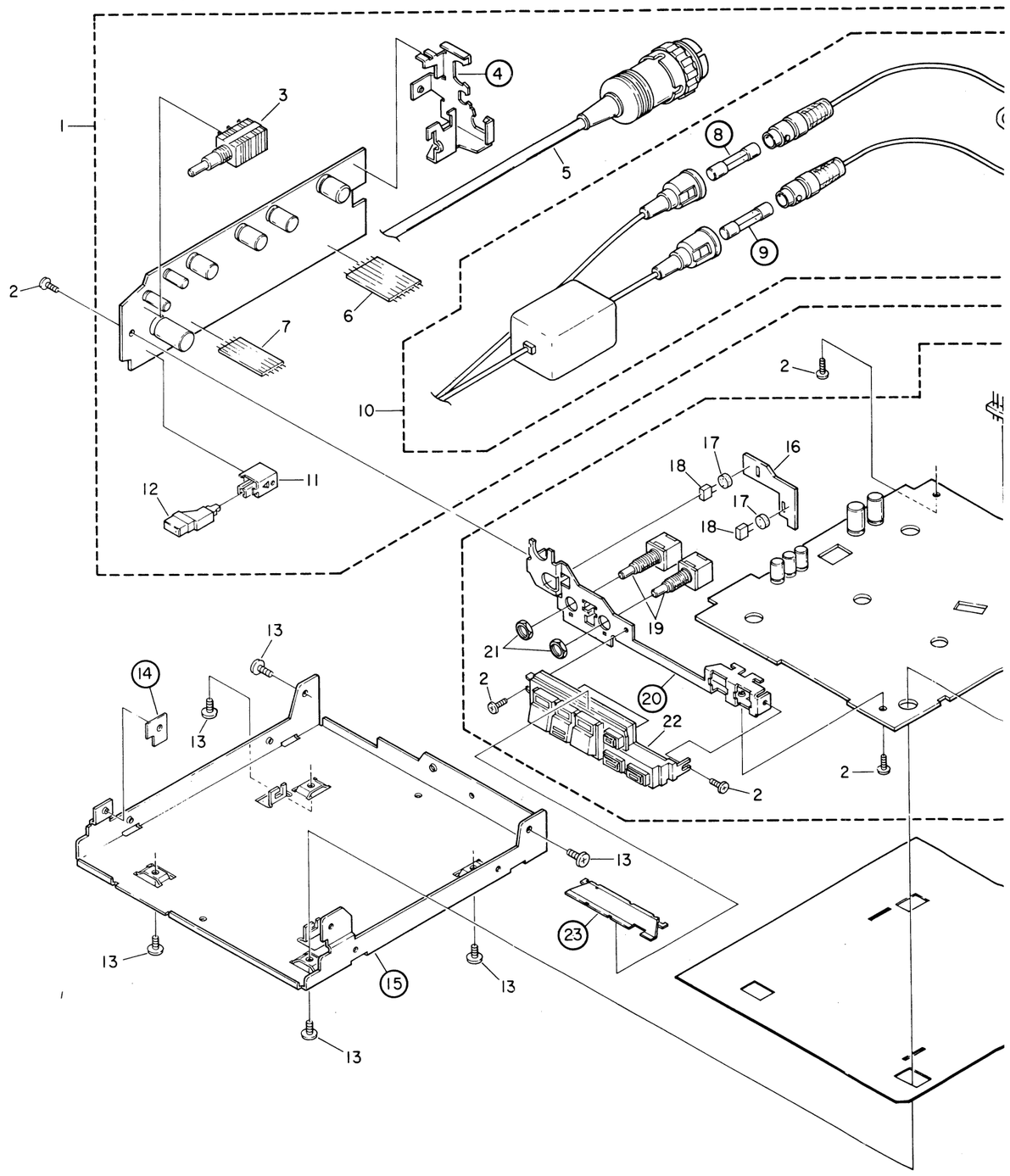


Fig. 16

● **Parts List**

Mark	No.	Part No.	Description
	1.	CNB-675	Case
	2.	BMZ30P050FBK	Screw
	3.	CXC-590	Grille Assy
	4.	BMZ30P040FMC	Screw
	5.	CNE-516	Holder
	6.	CXC-588	Door Unit
	7.	CBH-549	Spring
	8.	VACANT	
	9.	CBA-067	Nut (M7)
★	10.	CAA-394	Knob (BALANCE)
★	11.	CAA-393	Knob (VOLUME)
★	12.	CAA-344	Knob (BASS. TREBLE)
	13.	CBA-066	Nut (M6)
	14.	CBF-091	Washer (M6)
★	15.	CAC-448	Button (EJECT)

9. CHASSIS EXPLODED VIEW



. CHASSIS EXPLODED VIEW

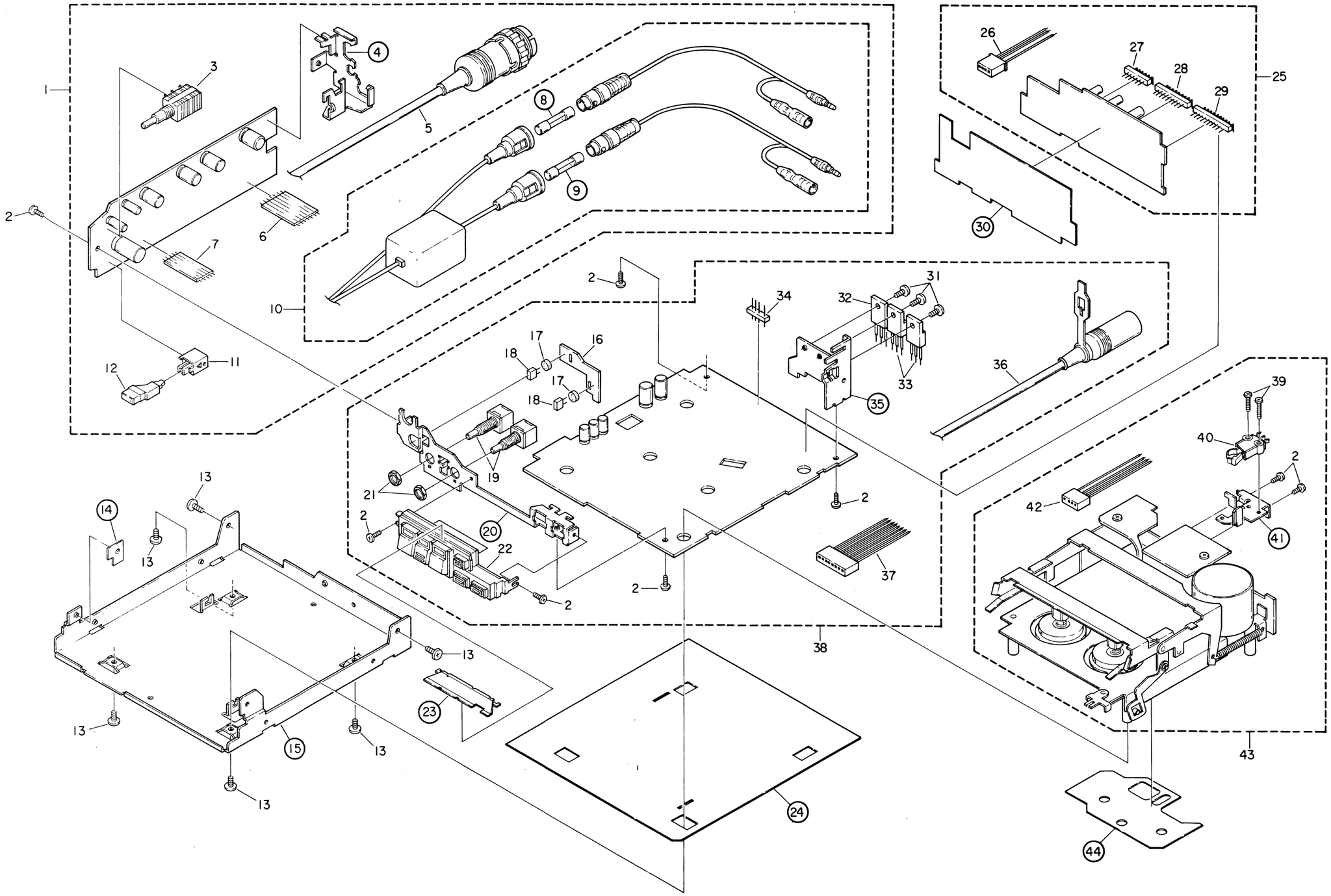


Fig. 17

• Parts List

NOTE

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ : GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description
	1.	CWK-275	Audio Unit
	2.	BMZ26P040FMC	Screw
★★	3.	CCS-275	Volume, 20kΩ (B), 50kΩ (MN) (VOLUME/BALANCE)
	4.		Holder
	5.	CDF-112	Cord
	6.	CDF-109	Connector (7P)
	7.	CDF-108	Connector (5P)
	8.		Fuse, 0.5A
	9.		Fuse, 4A
	10.	CDF-104	Cord
★★	11.	CSG-152	Switch (LOUDNESS)
★	12.	CAC-489	Button (LOUDNESS)
	13.	BMZ30P040FMC	Screw
	14.		Insulator
	15.		Chassis
	16.	CNL-185	P. C. Board
	17.	CNV-724	Bush
★	18.	BG5724K	LED (Panel Illumination)
★★	19.	CCS-271 or CCS-303	Volume, 100kΩ (B) (BASS, TREBLE)
	20.		Holder
	21.	CBA-066	Nut (M6)
★★	22.	CWS-126	Switch Assy
	23.		Lens
	24.		Insulator
	25.	CWX-420	Control Unit (B)
	26.	CDE-839	Connector (3P)
	27.	CKS-210	Plug (6P)
	28.	CKS-148	Plug (9P)
	29.	CKS-214	Plug (10P)
	30.		Insulator
	31.	BMZ30P050FMC	Screw
★★	32.	2SD1276	Transistor
★★	33.	2SB941	Transistor
	34.	CKS-094	Plug (4P)
	35.		Heat Sink
	36.	CDF-113	Cord
	37.	CDF-111	Connector (8P)
	38.	CWX-422	Control Unit (A)
	39.	BMZ20P080FMC	Screw
★★	40.	CSL-022	Switch (POWER)
	41.		Lever Unit
	42.	CDF-092	Connector (4P)
	43.	CXC-545	Cassette Mechanism Assy
	44.		Insulator

• Parts List

NOTE

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ : GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description
	1.	CWK-275	Audio Unit
	2.	BMZ26P040FMC	Screw
★★	3.	CCS-275	Volume, 20kΩ (B), 50kΩ (MN) (VOLUME/BALANCE)
	4.		Holder
	5.	CDF-112	Cord
	6.	CDF-109	Connector (7P)
	7.	CDF-108	Connector (5P)
	8.		Fuse, 0.5A
	9.		Fuse, 4A
	10.	CDF-104	Cord
★★	11.	CSG-152	Switch (LOUDNESS)
★	12.	CAC-489	Button (LOUDNESS)
	13.	BMZ30P040FMC	Screw
	14.		Insulator
	15.		Chassis
	16.	CNL-185	P. C. Board
	17.	CNV-724	Bush
★	18.	BG5724K	LED (Panel Illumination)
★★	19.	CCS-271 or CCS-303	Volume, 100kΩ (B) (BASS, TREBLE)
	20.		Holder
	21.	CBA-066	Nut (M6)
★★	22.	CWS-126	Switch Assy
	23.		Lens
	24.		Insulator
	25.	CWX-420	Control Unit (B)
	26.	CDE-839	Connector (3P)
	27.	CKS-210	Plug (6P)
	28.	CKS-148	Plug (9P)
	29.	CKS-214	Plug (10P)
	30.		Insulator
	31.	BMZ30P050FMC	Screw
★★	32.	2SD1276	Transistor
★★	33.	2SB941	Transistor
	34.	CKS-094	Plug (4P)
	35.		Heat Sink
	36.	CDF-113	Cord
	37.	CDF-111	Connector (8P)
	38.	CWX-422	Control Unit (A)
	39.	BMZ20P080FMC	Screw
★★	40.	CSL-022	Switch (POWER)
	41.		Lever Unit
	42.	CDF-092	Connector (4P)
	43.	CXC-545	Cassette Mechanism Assy
	44.		Insulator

● Parts List

NOTE

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ : GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description
	1.	CWK-275	Audio Unit
	2.	BMZ26P040FMC	Screw
★★	3.	CCS-275	Volume, 20kΩ (B), 50kΩ (MN) (VOLUME/BALANCE)
	4.		Holder
	5.	CDF-112	Cord
	6.	CDF-109	Connector (7P)
	7.	CDF-108	Connector (5P)
	8.		Fuse, 0.5A
	9.		Fuse, 4A
	10.	CDF-104	Cord
★★	11.	CSG-152	Switch (LOUDNESS)
★	12.	CAC-489	Button (LOUDNESS)
	13.	BMZ30P040FMC	Screw
	14.		Insulator
	15.		Chassis
	16.	CNL-185	P. C. Board
	17.	CNV-724	Bush
★	18.	BG5724K	LED (Panel Illumination)
★★	19.	CCS-271 or CCS-303	Volume, 100kΩ (B) (BASS, TREBLE)
	20.		Holder
	21.	CBA-066	Nut (M6)
★★	22.	CWS-126	Switch Assy
	23.		Lens
	24.		Insulator
	25.	CWX-420	Control Unit (B)
	26.	CDE-839	Connector (3P)
	27.	CKS-210	Plug (6P)
	28.	CKS-148	Plug (9P)
	29.	CKS-214	Plug (10P)
	30.		Insulator
	31.	BMZ30P050FMC	Screw
★★	32.	2SD1276	Transistor
★★	33.	2SB941	Transistor
	34.	CKS-094	Plug (4P)
	35.		Heat Sink
	36.	CDF-113	Cord
	37.	CDF-111	Connector (8P)
	38.	CWX-422	Control Unit (A)
	39.	BMZ20P080FMC	Screw
★★	40.	CSL-022	Switch (POWER)
	41.		Lever Unit
	42.	CDF-092	Connector (4P)
	43.	CXC-545	Cassette Mechanism Assy
	44.		Insulator

10. CASSETTE MECHANISM EXPLODED VIEW(TOP)

- **Parts List**

NOTE

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ : GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description
	1.	BMZ20P080FMC	Screw
★★	2.	CSL-025	Switch (FF/REW)
	3.	BMZ26P030FMC	Screw
	4.		Bracket
	5-7.	VACANT	
	8.	BMZ26P040FMC	Screw
	9.	CNR-128	Bearing
	10.	CXB-843	Gear Unit
	11.	CNV-950	Gear
	12.	CBF-045	Washer
	13.	CBH-524	Spring
	14.	YE20FUC	Washer
★★	15.	CXB-993	Roller Unit
	16.	YE15FUC	Washer
	17.	CHB-560	Spring
	18.	CNV-947	Arm
	19.	CXC-055	Lever
	20.	CNR-129	Bearing
	21.	CXB-844	Gear Unit
	22.	PMS20P040FMC	Screw
	23.	CBA-082	Screw
★★	24.	CPB-102	Head
	25.	CBL-178	Spring
	26.	CNW-064	Rubber
	27.	CBH-528	Spring
	28.	CBE-065	Washer
	29.	CNV-987	Arm
	30.	CXC-259	Head Base Unit
	31.	CLA-831	Roller
	32		Cam
	33.	CBH-529	Spring
	34.	CXB-852	Lever Unit
	35.		Chassis Unit
	36.	CXB-851	Lever Unit
	37.	CXB-861	Lever Unit
	38.		Arm
	39.	CBH-536	Spring
	40.	CXB-862	Bracket Unit
	41.	CMZ26P040FMC	Screw
	42.	CNE-326	Lever
	43.	CNV-952	Arm
	44.	CNV-951	Arm
	45.	CBH-553	Spring
	46.	CBH-531	Spring
	47.	CXB-853	Lever Unit
	48.	CNE-327	Lever
	49.	CNV-953	Arm
	50.		
	51.	CXB-969	Arm Unit
	52.	CLA-845	Bush
	53.	CMZ26P060FMC	Screw
	54.	CLA-844	Bush
	55.		Arm
	56.	CBH-535	Spring
	57.	CXB-971	Holder Unit
	58.	CBH-542	Spring
	59.	CBH-561	Spring
★★	60.	CXB-994	Roller Unit
	61.	CNV-988	Lever
	62.	CLA-846	Bush
	63.	CBH-532	Spring
	64.	CBH-537	Spring
	65.	CXB-858	Bracket Unit
	66.	CNL-252	P. C. Board
	67.	CKS-052	Plug (3P)
★★	68.	CSH-062	Switch (HEAD SELECTOR)
	69.	BMZ26P040FMC	Screw
	70.	WH26FMC	Washer

- Cassette Mechanism Exploded View (TOP)

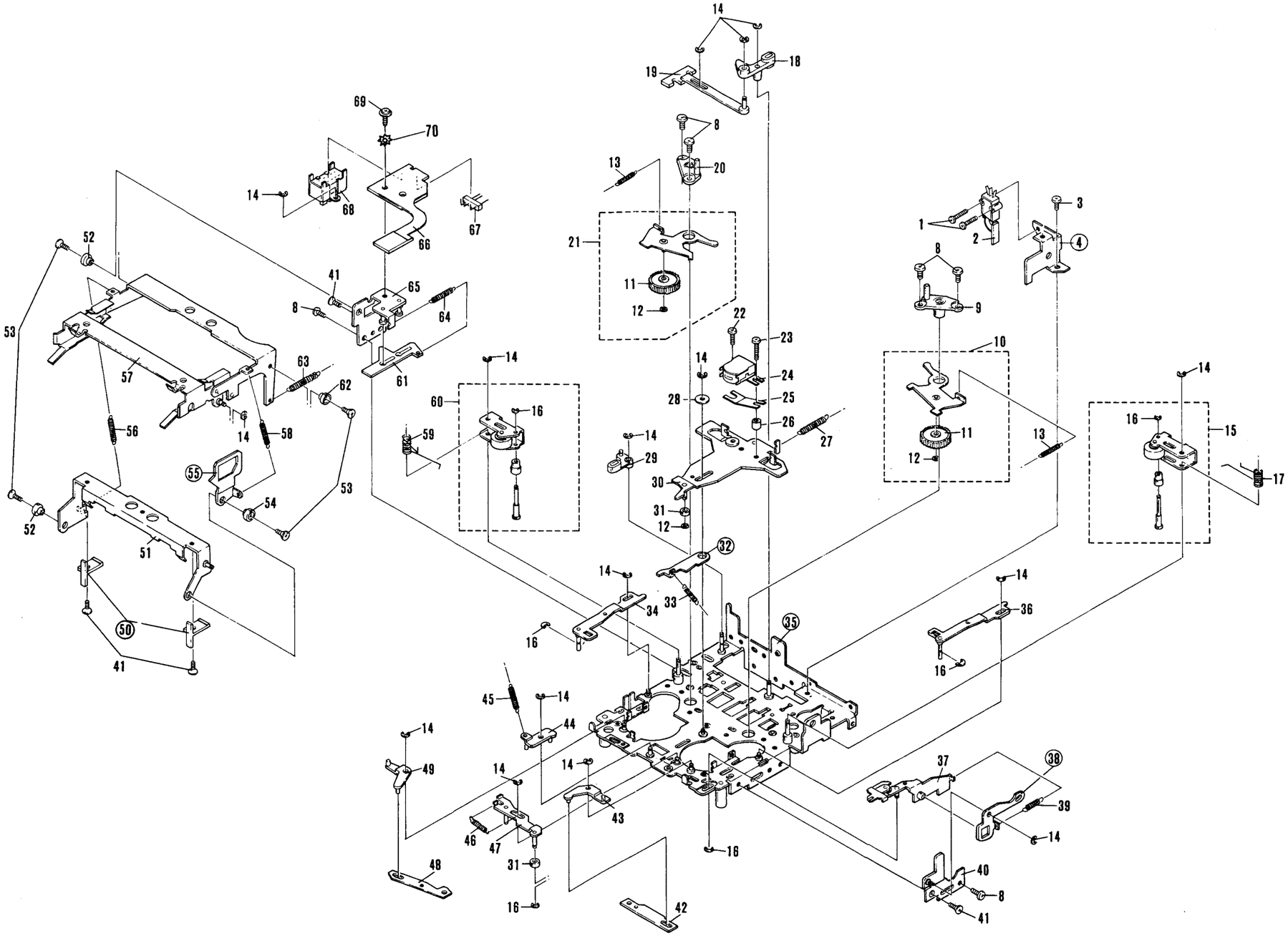


Fig. 18

11. CASSETTE MECHANISM EXPLODED VIEW(BOTTOM)

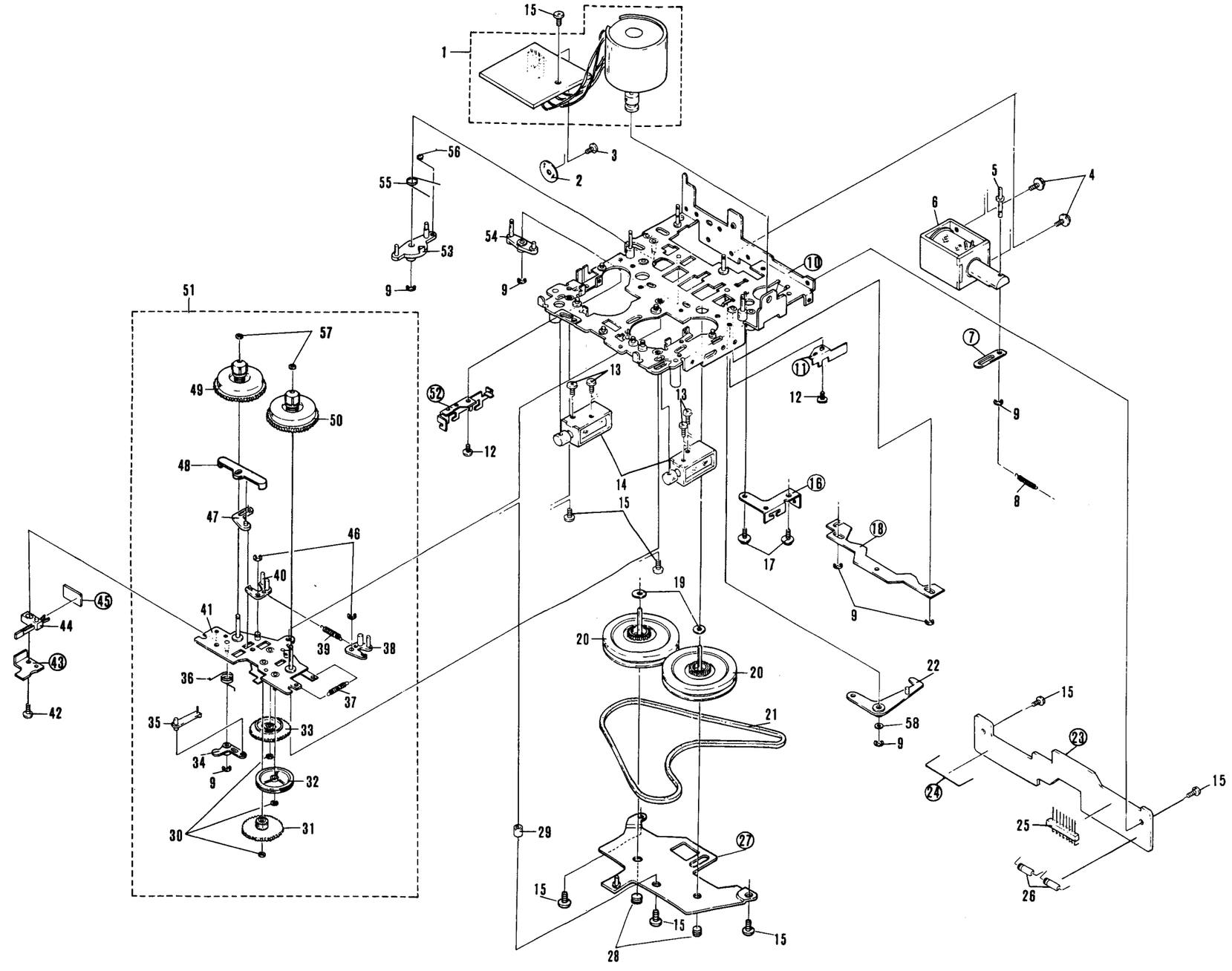


Fig. 19

• Parts List

NOTE

- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ : GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description
★★	1.	CXM-072	Motor
	2.	CNM-513	Spacer
	3.	BMZ26P060FMC	Screw
	4.	PMS26P040FMC	Screw
	5.	CLA-825	Shaft
★	6.	CXP-028	Solenoid
	7.		Arm
	8.	CBH-527	Spring
	9.	YE20FUC	Washer
	10.		Chassis Unit
	11.		Bracket
	12.	BMZ26P030FMC	Screw
	13.	BMZ20P025FMC	Screw
★	14.	CXP-029	Solenoid
	15.	BMZ26P040FMC	Screw
	16.		Bracket
	17.	PMS26P030FMC	Screw
	18.		Cam
	19.	CBF-111	Washer
	20.	CNR-130	Flywheel
★★	21.	CNT-083	Belt
	22.	CXC-073	Arm Unit
	23.		P. C. Board
	24.		
	25.	CKS-054	Plug (8P)
★	26.	IS1886	Diode
	27.		Holder
	28.	CNV-984	Screw
	29.	CLA-817	Collar
	30.	CBF-046	Washer
	31.	CNV-955	Gear
	32.	CLA-914	Pulley
	33.	CNV-956	Gear
	34.	CNV-962	Lever
	35.	CNV-959	Arm
	36.	CBH-521	Spring
	37.	CBH-548	Spring
	38.	CNV-960	Lever
	39.	CBH-520	Spring
	40.	CNV-961	Lever
	41.	CXB-829	Sub Chassis Unit
	42.	BMZ20P080FMC	Screw
	43.		Cover
★★	44.	CSN-061	Switch (SENSING)
	45.		P. C. Board
	46.	YE25FUC	Washer
	47.	CNV-958	Lever
	48.	CNV-957	Arm
	49.	CXB-833	Reel Unit
	50.	CXB-832	Reel Unit
	51.	CXB-977	Sub Chassis Assy
	52.		Bracket
	53.	CNR-093	Arm
	54.	CXB-919	Arm
	55.	CBH-526	Spring
	56.	CBH-525	Spring
	57.	CBF-045	Washer
	58.	CBE-077	Washer

12. ELECTRICAL PARTS LIST

NOTE:
When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	*56 × 10¹*	*561*	*RD1/4PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD1/4PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62KΩ	*562 × 10¹*	*RN1/4SR 5 6 2 1 F*

- *For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.*
  ★ ★: GENERALLY MOVES FASTER THAN ★.
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Control Unit (A) (CWX-422)

MISCELLANEOUS

Mark	Part No.	Symbol & Description
★★	TA75558S	IC301
★★	TC4011BP	IC451
★★	TC4016BP	IC452
★★	2SC2021F	Q151, Q152, Q154 – Q156, Q301 – Q303, Q404, Q406, Q451, Q452, Q501
★★	2SD612 or 2SD1189	Q153
★★	2SA937F	Q304, Q502 – Q505
★★	2SB822F	Q401
★★	2SD1276	Q402
★★	2SB941	Q403, Q405
★	XZ-102	D151
★	IS2076A or IS2473 or US1040 or WG713	D152
★	IS1555 or IS2076 or DS442 or IS2473 or US1040 or WG713	D301
★	IS1886 or SIB01-02 or SM-1A-02 or DS135	D502
★★	CCS-271 or CCS-303	VR301, VR302, Volume, 100kΩ (B) (BASS, TREBLE)

RESISTORS

Mark	Part No.	Symbol & Description
	RS1/8S □□□J	R151-R171, R301 – R330, R401 – R404, R451 – R465, R468 – R479 (Chip Resistor)
	RD1/4PM □□□J	R466, R467
	VACANT	R405 – R450

CAPACITORS

Mark	Part No.	Symbol & Description
	CQMA153J50L	C151, C152
	CEA101M16L	C153
	CEAH101M10L	C154
	CQMA223J50L	C301, C302
	CKSYB102K50	C303 – C306 Chip Capacitor
	CCSSL330K50	C307, C308 Chip Capacitor
	CEAH100M16L	C309, C310, C311
	CEA100M16L	C312
	CKDYB101K50L	C313
	CEA100M16LL	C401, C451
	CEA100M16NP	C452
	CKSYB103K50	C452 – 455, C501 – C503 Chip Capacitor
	VACANT	C402 – C450

Control Unit (B) (CWX-420)

MISCELLANEOUS

Mark	Part No.	Symbol & Description
★★	TA7325P	IC101
★★	PD2001	IC601
★★	TC9130P	IC602
★★	2SC1815 or 2SC945 or 2SC536NP or 2SC828 or 2SC2320 or JC501	Q101, Q601 – Q607
★	XZ-107	D101
★	XZ-072	D601
	1S1555 or 1S2076 or DS442 or 1S2473 or US1040 or WG713	D602, D605 – D610
★	WZ-098	D603
★	WZ-172	D604
★★	CCP-169	VR101, VR102 Semi-fixd 150Ω (B)

RESISTORS

Mark	Part No.	Symbol & Description
	RD1/4 VM □□□J	R101 – R111, R601 – R612, R614 – R630
	HCN-106	R613 Fuse Resistor 33Ω(¼W)
	VACANT	R112

CAPACITORS

Mark	Part No.	Symbol & Description
	CKDYB681K50L	C101, C102
	CEA010M50LL	C103, C104
	CEA470M10L	C105, C106
	CAMA333J50L	C107, C108
	CEANL3R3M35LL	C109, C110
	CEA221M16L	C111
	CEA330M16LL	C601
	CEA330M16L	C602, C607
	CEA100M16LL	C603, C606, C608
	CEAH010M50L	C604
	CEAR22M50LL	C605
	CQMA103J50L	C609, C610, C611
	CEA0R1M50LL	C612

Head P. C. Board Unit

Mark	Part No.	Symbol & Description
★★	CSH-062	S1 Switch (HEAD SELECTOR)

Sensing P. C. Board

Mark	Part No.	Symbol & Description
★	IS1886	D1, D2

Panel Illumination Unit

Mark	Part No.	Symbol & Description
★	BG5724K	D302, D303 LED

Audio Unit (CWK-275)

MISELLANEOUS

Mark	Part No.	Symbol & Description
★★	PA3012	IC201, IC202
★★	KHA102	IC351
★★	2SC1815 or 2SC2320 or 2SC2458	Q201, Q351
★	IS1555 or IS2076 or DS442 or IS2473 or US1040 or WG713	D201, D202
	CTH-073	L201, L202 Coil
	CWW-128	IB201, IB202
	CWW-129	IB203, IB204
★★	CCS-275	VR351 Volume, 20kΩ(B), 50kΩ(MN) (VOLUME/BALANCE)
★★	CSG-152	S351 Switch (LOUDNESS)

RESISTORS

Mark	Part No.	Symbol & Description
	RD1/4VM□□□J	R201 –R234, R351, R353 – R356
	RD1/6PS □□□J	R235 – R238, R352
	RD1/4PM□□□J	R357
	RD1/2PS□□□J	R358

CAPACITORS

Mark	Part No.	Symbol & Description
	CEA221M10L	C201, C202, C207, C208
	CEA100M16LL	C203, C204, C221, C222, C231, C232
	CEA101M10L	C205, C206
	CQMA153J50L	C209, C210, C215, C216
	CQMA182J50L	C211, C212
	CEAR47M50LL	C213, C214, C241 – C244
	CQMA103J50L	C217, C218
	CEAR15M50LL	C219, C220, C233 – C236 C353, C354
	CQMA823J50L	C223, C224
	CQMA183J50L	C225, C226
	CEA4R7M35LL	C227 – C230, C249, C250
	CQMA392J50L	C237, C238
	CQMA332J50L	C239, C240
	CQMA562J50L	C245, C246
	CCDSL390J50L	C247, C248
	CQMA152J50L	C351, C352
	CEAH010M50L	C355
	CEA010M50LL	C356
	CEA220M10LL	C357
	CEA470M16L	C358
	CEA3R3M50LL	C359
	CEAH3R3M50L	C360
	CEA330M16L	C361
	CEA471M16L	C362

Miscellaneous Parts List

Mark	Part No.	Symbol & Description
★★	CSL-025	S1 Switch (FF/REW)
★★	CSN-061	S2 Switch (SENSING)
★★	CSL-022	S3 Switch (POWER)
★★	CXM-072	M Motor
★	CXP-028	SO1 Main Solenoid
★	CXP-029	SO2, SO3 Sub Solenoid
★	IS1886 or DS135	D1
	CPB-102	HD1 Head

13. PACKING METHOD

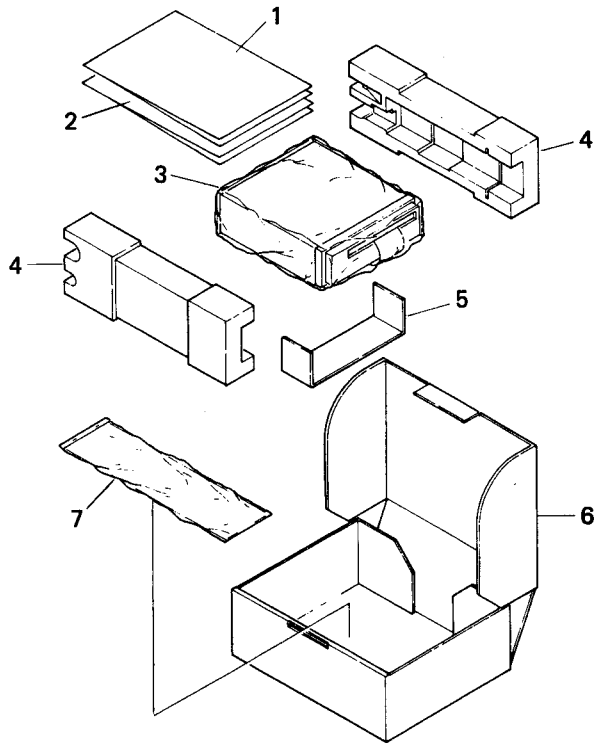


Fig. 20

- **Parts List**
- *Parts whose parts numbers are omitted are subject to being not supplied.*

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	CRD-270	Owner's Manual (English, French, German, Spanish)		7-1.	CNF-111	Strap
					7-2.	CDE-437	Cord
					7-3.	CBA-028	Screw for Strap
	2.	CRD-271	Owner's Manual (Swedish, Norwegian, Dutch, Italian)		7-4.	CBA-101	Screw, M4 x 6
					7-5.	CBA-102	Screw, M5 x 16
					7-6.	B70-055	WN4ϕ x 4.5t
	3.	CEG-113	Cover		7-7.	B70-056	WN5ϕ x 4.5t
	4.	CHC-560	Styrofoam (1 set pair)		7-8.	WS40FMC	Washer
	5.	CNB-198	Mounting Bracket				
	6.	CHC-565	Carton				
	7.	CEA-466	Accessory Kit				